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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,150	12/01/2003	Masami Tomita	245003US0	1621
22850	7590	01/18/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			DOTE, JANIS L	
			ART UNIT	PAPER NUMBER
			1756	
DATE MAILED: 01/18/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,150

Applicant(s)

TOMITA ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-13 and 16-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6, 10-13 and 16-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/16/05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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1. The examiner acknowledges the cancellation of claims 7 and 8, the amendments to claims 1, 5, 6, 11, 12, and 17, and the addition of claim 20 set forth in the amendment filed on Nov. 3, 2005. Claims 1-6, 10-13, and 16-20 are pending.

2. The examiner has considered the copending applications listed on the "List of related cases" filed in the Information Disclosure Statement filed on Nov. 16, 2005.

3. The rejection of claim 12 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Aug. 3, 2005, paragraph 5, has been withdrawn in response to the amendment filed on Nov. 3, 2005, to claim 12.

The rejection of claims 1-5, 11-13, 16, 18, and 19 under 35 U.S.C. 103(a) over US 6,852,462 B2 (Emoto'462) combined with Japanese Patent 06-175403 (JP'403), set forth in the office action mailed on Aug. 3, 2005, paragraph 8, has been withdrawn in response to the amendments to claims 1 and 11 set forth in the amendment filed on Nov. 3, 2005. Those amendments to claims 1 and 11 add the limitations of now-canceled claims 7 and 8, that the toner binder resin further comprises an unmodified polyester resin (ii) that has a glass transition temperature (T_g) of from 35 to 55°C and a "peak weight average

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molecular weight" of 1,000 to 30,000. Although Emoto'462 discloses a toner comprising a binder resin comprising a modified polyester resin and an unmodified polyester resin - dead polymer (1), Emoto'462 does not disclose that said unmodified polyester resin has the Tg and "peak weight average molecular weight" as recited in instant claims 1 and 11. Furthermore, there is not enough evidence on the present record for a person having ordinary skill in the art to reasonably presume that the Emoto'462 unmodified polyester has the properties recited in instant claims 1 and 11.

The rejections under the judicially created doctrine of obviousness-type double patenting of claims 1-5, 10, 11, 13, 16, 18, and 19 over claims 1-25 of copending Application No. 10/712,026 in view of JP'403; of claims 1-5, 10, 11, 16, and 18 over claims 1-17, 24, and 25 of copending Application No. 10/645,804 in view of Diamond, Handbook of Imaging Materials, pp. 168-169 (Diamond) and JP'403; of claims 1-7, 10-13, and 16 over claims 1-27 of copending Application No. 10/670,320 in view of JP'403; and of claims 1-5, 8, 10, 11, 13, and 16 over claims 1-17 of copending Application No. 10/724,260 combined with JP'403, set forth in the office action mailed on Aug. 3, 2005, paragraphs 9-12, have been withdrawn in response to the amendments to claims 1 and 11, as described supra. None of the

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claims in the copending applications recite the use of an unmodified polyester resin having the Tg and the "peak weight average molecular weight" recited in instant claims 1 and 11.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-6, 10-13, 16, and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Instant claims 1 and 11 and claims dependent thereon are indefinite in the phrase "peak weight average molecular weight" because it is not clear what is meant by the term. The instant specification does not define the term. See page 28, lines 8-11. Nor does the term appear in technical dictionaries: it does not appear to be a standard term of art. Clarification is required.

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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7. Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0142265 A1 (Tomita), as evidenced by US 6,935,520 B2 (Bando).

Tomita discloses a toner comprising a binder resin comprising a urea-modified polyester resin and an unmodified polyester resin - low molecular weight polyester 2, an ester wax as the releasing agent, and carbon black associated with the tradename REGAL 400R manufactured by Cabot Co. See paragraphs 0210-0215, 0217-0224, 0243-0245; and example 7 in paragraph 0246. The toner has a number average particle size (Dn) of 3.4 μm and a volume average particle size (Dv) of 4.0 μm , and a ratio of Dv/Dn of 1.18. The toner has a spindle shape, which meets the shape limitations recited in instant claim 17. See paragraph 0246 and Table 1 at page 22, example 7. The values of Dv and the ratio Dv/Dn are within the ranges recited in instant claim 17. The weight ratio of the urea-modified polyester to low molecular weight unmodified polyester resin 2 is about 0.4. The weight ratio was determined by the information provided in example 7 of Tomita. Tomita does not disclose that the carbon black associated with the tradename REGAL 400R has a pH as recited in instant claim 17. However, it is well known in the carbon black art that carbon black

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associated with the trademark REGAL 400R manufactured by Cabot Co. has a pH of 4.0, which is within the pH range of "not greater than 7" recited in the instant claims. See Bando, col. 36, line 62-63. Accordingly, carbon black associated with the tradename REGAL 400R meets the carbon black limitations recited in the instant claims.

The Tomita toner 7 is obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing a material solution comprising the ester wax and the low molecular weight unmodified polyester; (3) forming a pigment-wax dispersion by mixing the master batch of step (1), the material solution, and additional low molecular weight unmodified polyester; (4) mixing the pigment-wax dispersion of step (3), a prepolymer comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the urea-modified polyester, and a ketimine compound, which has an active hydrogen, in an organic solvent; (5) dispersing the mixture of step (4) in an aqueous medium comprising resin particles, while reacting the ketimine compound with the prepolymer to form toner particles; (6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles of step (6); and (8) drying the toner particles. Paragraphs 0213, 0217-0224,

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0240, and 0244-0246. The Tomita process steps meet the product-by process limitations recited in instant claim 17.

Tomita further discloses an image forming apparatus that meets the apparatus comprising a process cartridge as recited instant claim 17. The Tomita apparatus comprises a process cartridge **10**, which comprise a photoreceptor **11**, a charger **12**, a developing unit **13**, and a cleaning device **14**. See Fig. 7 and paragraphs 0203-0204. Tomita further discloses that the developing unit comprises a toner container. Paragraph 0205, lines 1-3.

8. Claims 12, 18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0142265 A1 (Tomita), as evidenced by Bando and applicants' admission at page 28, lines 11-14, of the instant specification.

Tomita, as evidenced by Bando, discloses a toner as described in paragraph 7 above, which is incorporated herein by reference. As discussed in paragraph 7 above, the Tomita toner 7 has a volume average particle size (Dv) and a ratio of Dv/Dn that meets the Dv and ratio Dv/Dn recited in instant claims 12, 18, and 19. The toner has a spindle shape, which meets the shape limitations recited in instant claims 12, 18, and 19. The weight ratio of the urea-modified polyester to low

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polyester resin 2 is about 0.4. The Tomita toner 7 is obtained by a process that meets the product-by process limitations recited in instant claims 18 and 19, and the process steps recited in instant claim 12. The Tomita imaging apparatus meets the apparatus components recited in instant claim 19.

Tomita further discloses that toner can be used in a two-component developer comprising a carrier. Paragraphs 0150, 0151, and 0270. Tomita also discloses an imaging process that meets the steps recited in instant claim 18. Paragraph 0032.

As discussed in paragraph 7 above, the Tomita toner 7 comprises a binder resin comprising a urea-modified polyester resin and an unmodified polyester resin - low molecular weight polyester 2. The Tomita low molecular weight unmodified polyester 2 has a Tg of 43°C, a peak molecular weight of 5,200, and a weight average molecular weight of 6,200. Paragraph 0243. The Tomita Tg meets the Tg range of 35 to 55°C recited in instant claims 12, 18, and 19. The value of the Tomita peak molecular weight of 5,200 is within the numerical value of the peak weight average molecular weight range of 1,000 to 30,000 recited in instant claims 12, 18, and 19.

Tomita does not identify the peak molecular weight of the Tomita low molecular weight unmodified polyester 2 as a "peak weight average molecular weight" as recited in instant

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claims 12, 18, and 19. However, as discussed above, the value of the Tomita peak molecular weight is within the peak weight average molecular weight range recited in instant claims 12, 18, and 19. Tomita in paragraph 0092, lines 4-7, further teaches that when the peak molecular weight of the unmodified polyester resin is less than 1000, the storage stability at high temperatures may deteriorate; when the peak molecular weight is greater than 10,000, the image-fixing properties at low temperatures may deteriorate. These are the same properties sought by applicants. The instant specification at page 28, lines 11-14, discloses that when the peak weight average molecular weight of the unmodified polyester resin is less than 1000, the high temperature preservability deteriorates; when the peak weight average molecular weight is greater than 10,000, the low temperature fixability deteriorates. Accordingly, because the peak molecular weight of the Tomita low molecular weight unmodified polyester 2 is within the numerical range of the peak weight average molecular weight recited in instant claims 12, 18, and 19, and because the Tomita peak molecular weight provides the same properties sought by applicants' peak weight average molecular weight, it is reasonable to presume that the Tomita peak molecular weight is a peak weight average molecular weight as recited in instant claims 12, 18, and 19. The burden

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is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

9. Applicant's arguments filed on Nov. 3, 2005, with respect to the rejections over Tomita in paragraphs 7 and 8 above have been fully considered but they are not persuasive.

Applicants assert that the amendment to claim 1, from which claims 12, 18, and 19 depend, overcomes the rejections over Tomita because claim 1 now recites the limitations that were recited in claims 7 and 8, which were not rejected over Tomita in the previous office action.

Applicants' assertion is not persuasive. The examiner reminds applicants that they perfected their claim of foreign priority under 35 U.S.C. 119 to Japanese patent application No. 2002-347478 for the subject matter recited in claims 1-8, 10, 11, 13, and 16 previously filed on May 31, 2005, by filing a verified English-language translation of said document on May 31, 2005. Tomita is available as prior art under 35 U.S.C. 102(e), and has an effective filing date of Nov. 14, 2003, which is after applicants' priority date. Thus, Tomita is not prior art to the subject matter recited in claims 7 and 8. Therefore, claims 7 and 8 were not rejected over Tomita in the prior office action mailed on Aug. 3, 2005.

However, for the reasons discussed in the office action mailed on Aug. 3, 2005, paragraph 7, the translation of the priority document did not provide an adequate written description of the subject matter recited in the claims 12 and 17-19 as required under 35 U.S.C. 112, first paragraph. Therefore, applicants have not perfected their claim to foreign priority for the subject matter recited in instant claims 12 and 17-19, and Tomita remains as prior art with respect to instant claims 12 and 17-19.

Furthermore, instant claim 17 does not require the presence of an unmodified polyester resin having the particular Tg and peak weight average molecular weight recited in previously filed claims 7 and 8. Moreover, as discussed in paragraph 8 above, the Tomita unmodified polyester 2 has a Tg and a peak molecular weight that meet, respectively, the Tg and peak weight average molecular weight recited in instant claims 12, 18, and 19.

Accordingly, the rejections over Tomita in paragraphs 7 and 8 above stand.

10. Claim 17 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 and 24 of copending Application

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No. 10/645,804 (Application'804) in view of Diamond, Handbook of Imaging Materials, pp. 168-169 (Diamond) and Japanese Patent 06-175403 (JP'403). See the USPTO translation of JP'403 for cites.

Reference claim 16, which depends from reference claim 1, recites a toner comprising toner particles comprising a binder resin, wherein the toner particles have a spindle form. The spindle form meets the toner form limitation recited in instant claim 17. Reference claim 14, which depends on reference claim 1, requires that the toner have a volume average particle size of 3.0 to 8.0 μm , which overlaps the range of 3 to 7 μm recited in instant claim 17, and a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.00 to 1.20. The ratio D_v/D_n of 1.00 to 1.20 is within the range of 1.00 to 1.25 recited in instant claim 17. Reference claim 8, which depends from reference claim 1, requires that the binder resin be a modified polyester, which meets the binder compositional limitations recited in instant claim 17. Reference claim 9, which depends on reference claim 8, requires that the toner be made by steps that meet the steps recited in instant claim 17 but for the presence of particular carbon black recited in instant claim 17.

Reference claim 24 covers a process cartridge that meets the structural limitations recited in instant claim 17. The

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image developer, i.e., developing device, recited in reference claim 24 comprises a toner, which is the same toner recited in reference claim 1.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter claimed in Application'804, to make and use a toner comprising the modified binder resin recited in reference claims 8 and 9, and to adjust, through routine experimentation, the Dv and Dn of the toner, such that the resultant toner has a Dv and a ratio Dv/Dn as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining a process cartridge that is capable of providing toned images in an electrophotographic process.

The claims of Application'804 do not recite that the toner comprises the colorant carbon black as recited in instant claims 1 and 11. However, the use of color coloring agents has long been well known in the art. Diamond discloses that the most common colorant for toners is carbon black. Page 168, line 16. A carbon black having a pH of not greater than 7 is well known in the toner prior art. JP'403 teaches a carbon black having an ultraviolet absorption of 0.03, a BET specific surface area of 126 m²/g, a DBP oil absorption of 100 ml/100g, and a pH of 3. See the translation, paragraph 0020. According

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to JP'403, when a toner comprises such a carbon black as the toner colorant, the toner has improved toner charge rise characteristics, and continuously provides images with stable image density with "no image smudging, e.g., blurring." The JP'403 carbon black prevents toner scattering in the printer or copying machine. Translation, paragraph 0037. JP'403 further teaches that the use of "acidic" carbon black is desirable to improve the toner charge characteristics. The "acidic" carbon black has improved compatibility with the toner resin.

Translation, paragraph 0013.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'804 and the teachings in Diamond and JP'403, to use the JP'403 carbon black as the colorant in the toner rendered obvious over the subject matter recited in Application'804 because that person would have had a reasonable expectation of successfully obtaining a process cartridge that continuously provide toner images with stable image density and with no image smudging or toner scattering.

Applicant's arguments filed on Nov. 3, 2005, have been fully considered but they are not persuasive.

Applicants assert that the amendments to claims 1 and 11 overcome the rejection over Application'804 because claims 1

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and 11 now recite the limitations that were recited in claims 7 and 8, which were not rejected over Application'804 in the previous office action.

However, instant claim 17 does not require the presence of an unmodified polyester resin having the particular Tg and peak weight average molecular weight recited in previously filed claims 7 and 8. Accordingly, the rejection of claim 17 over the subject matter recited in the claims of Application'804 combined with the other cited prior art stands.

11. Claim 17 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/712,026 (Application'026) in view of JP'403 and US 5,430,526 (Ohkubo). See the USPTO translation of JP'403 for cites.

Ohkubo discloses an electrophotographic process cartridge that meets the structural components recited in instant claim 17, but for the particular toner recited in instant claim 17. The process cartridge **10** shown in Figs. 1 and 2 comprises the photosensitive member **3**, a contact charger **4**, a developing device **5**, which comprises a container comprising a toner, and a cleaning unit **8**. Figs. 1 and 2; col. 2,

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lines 4761; col. 3, lines 15-16; and col. 3, line 65, to col. 4, line 8.

Ohkubo does not exemplify the particular toner recited in the instant claim. However, Ohkubo does not limit the type of toner used.

Reference claim 8 of application'026, which depends from reference claim 1, recites a toner comprising a binder resin comprising a modified polyester resin and a colorant. The binder resin meets the binder resin limitation recited in instant claim 17. Reference claim 14, which depends from reference claim 1, requires that the toner have a volume average particle size of 3.0 to 8.0 μm , which overlaps the range of 3 to 7 μm recited in instant claim 17, and a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.00 to 1.20. The ratio D_v/D_n of 1.00 to 1.20 is within the range of 1.00 to 1.25 recited in instant claims 1 and 11. Reference claim 16, which depends from reference claim 1, requires that the toner have the shape of a spindle as recited in instant claim 17. Reference claims 9 and 10, which both depend from reference claim 8, which depends from reference claim 1, require that the modified polyester resin be made by process steps that meet the product-by-process limitations recited in instant claim 17.

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Application'026 does not recite that the colorant in the toner recited in reference claim 1 is a carbon black having a pH of not greater than 7 recited in instant claim 17.

However, a carbon black having a pH of not greater than 7 is well known in the toner prior art. JP'403 teaches a carbon having a pH of 3. The discussion of JP'403 in paragraph 10 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'026 and the teachings of JP'403, to use the JP'403 carbon black as the colorant in toner recited in Application'026, and to adjust, through routine experimentation, the Dv and Dn of the toner, such that the resultant toner has a Dv and a ratio Dv/Dn as recited in the instant claim. It would have also been obvious for that person to use the resultant toner in the process cartridge disclosed by Ohkubo. That person would have had a reasonable expectation of successfully obtaining a toner and a process cartridge that continuously provide toner images with stable image density with no image smudging or toner scattering.

12. Claim 17 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being

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unpatentable over claims 1, 3, and 7-27 of copending Application No. 10/670,320 (Application'320) in view of JP'403 and Ohkubo. See the USPTO translation of JP'403 for cites.

Ohkubo discloses an electrophotographic process cartridge that meets the structural components recited in instant claim 17. The discussion of Ohkubo in paragraph 11 above is incorporated herein by reference.

Ohkubo does not exemplify the particular toner recited in the instant claim. However, Ohkubo does not limit the type of toner used.

Reference claim 13 of application'320, which depends from reference claim 1, recites a toner comprising a modified polyester resin, a second resin, and a colorant, wherein the toner has a spindle form. The spindle form meets the toner form limitation recited in instant claim 17. The toner is obtained by process steps that meet the steps recited in instant claim 17, but for the presence of the particular carbon black recited in instant claim 17. Reference claim 17, which depends from reference claim 1, requires that the toner have a volume average particle size ranging from 3 to 7 μm , which meets the particle size range recited in instant claim 17. Reference claim 18, which depends on reference claim 17, requires that the toner have a ratio of the volume average particle size (D_v) to

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the number average particle size of not greater than 1.25, which meets the ratio range recited in instant claim 17.

The claims of Application'320 do not recite that the colorant in the toner is a carbon black having a pH of not greater than 7 as recited in instant claims 1 and 11. However, a carbon black having a pH of not greater than 7 is well known in the toner prior art. JP'403 teaches a carbon black having a pH of 3. The discussion of JP'403 in paragraph 10 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'320, to use the JP'403 carbon black as the colorant in toner recited in Application'403, and to adjust, through routine experimentation, the Dv and Dn of the toner, such that the resultant toner has a Dv and a ratio Dv/Dn as recited in the instant claim. It would have also been obvious for that person to use the resultant toner in the process cartridge disclosed by Ohkubo. That person would have had a reasonable expectation of successfully obtaining a toner and a process cartridge that continuously provide toner images with stable image density with no image smudging or toner scattering.

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13. Claims 1-5, 8, 10, 11, 13, and 16 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/724,260 (Application'260) combined with JP'403 and Okhubo. See the USPTO translation of JP'403 for cites.

Ohkubo discloses an electrophotographic process cartridge that meets the structural components recited in instant claim 17. The discussion of Ohkubo in paragraph 11 above is incorporated herein by reference.

Ohkubo does not exemplify the particular toner recited in the instant claim. However, Ohkubo does not limit the type of toner used.

Reference claim 13 of application'260, which depends from reference claim 1, recites a toner comprising a first binder resin, a second binder resin, and a colorant, wherein the toner has a spindle form. The spindle form meets the toner form recited in instant claim 17. Reference claim 5, which depends from reference claim 1, requires that the second resin binder be a modified polyester resin, which meets the binder resin limitation recited in instant claim 17. Reference claim 6, which depends on reference claim 1, requires that the toner have a volume average particle size of 4 to 7 μm , which is within the

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particle size range of 3 to 7 μm recited in instant claim 17. Reference claim 7, which depends on reference claim 6, requires that the toner have a ratio of the volume average particle size (D_v) to the number average particle size of 1.00 to 1.20, which meets the ratio range recited in instant claim 17. Reference claim 18 recites a method of making the toner of reference claim 1 comprising the steps recited in instant claim 17, but for the presence of the carbon black recited in instant claim 17.

The claims of Application'320 do not recite that the colorant in the toner is a carbon black having a pH of not greater than 7 as recited in instant claims 1 and 11. However, a carbon black having a pH of not greater than 7 is well known in the toner prior art. JP'403 teaches a carbon black having a pH of 3. The discussion of JP'403 in paragraph 10 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'260 and the teachings in JP'403, to use the JP'403 carbon black as the colorant in toner recited in Application'260, the modified polyester resin recited in reference claim 5 as the second binder resin, and to adjust, through experimentation, the D_v and D_n of the toner, such that

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the resultant toner has a Dv and Dv/Dn as recited in the instant claims. It would have also been obvious for that person to use the resultant toner in the process cartridge disclosed by Ohkubo. That person would have had a reasonable expectation of successfully obtaining a toner and a process cartridge that continuously provide toner images with stable image density with no image smudging or toner scattering.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (571) 203-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Jan. 11, 2005


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